

REMARKS

Claims 26, 31 and 35 have been amended. Claims 26, 28-31, 33-35 and 37-48 remain pending. Applicants reserve the right to pursue the original claims and other claims in this and other applications. Please reconsider the above-referenced application in light of the amendments and foregoing remarks.

Applicants acknowledge with appreciation that the Advisory Action, dated November 14, 2005, agrees that U.S. Patent No. 6,348,365 ("Moore") is not a proper prior art reference. As a result, the rejections using Moore in the final Office Action are not responded to in this Amendment.

Claims 26, 28-31, 33-35 and 37-48 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,487,106 ("Kozicki") in view of Hudson. The rejection is respectfully traversed.

The Advisory Action asserts that Kozicki discloses a CMP process conducted on a chalcogenide glass layer. The final Office Action cites to Kozicki's col. 6, l. 62 through col. 7, l. 4, as support. Applicants respectfully disagree.

The text of Kozicki's col. 6, l. 62 through col. 7, l. 4, corresponds to FIG. 1. In FIG. 1, structure 100 comprises an ion conductor 140 that "includes metal and/or metal ions dissolved in chalcogenide glass." (Col. 5, ll. 39-41). Ion conductor 140 is formed between first and second electrodes 120, 130. These elements form Kozicki's structure 100. Kozicki further discloses that "at least a portion of structure 100 is formed *within* a via of an *insulating layer* 150." (Col. 6, ll. 29-31) (emphasis added).

Kozicki then teaches that "*any excess material remaining on a surface of insulating layer* 150 may be moved, using, for example, chemical mechanical polishing and/or etching techniques." (emphasis added). The only material that undergoes a

CMP process in Kozicki is what is *left on* insulating layer 150. Kozicki's ion conductor 140, which arguably corresponds to Applicants' claimed chalcogenide glass layer, *never* undergoes a CMP process. In fact, electrode 120 is formed *on* ion conductor 140 preventing it from undergoing a CMP process. Nonetheless, to expedite prosecution, Applicants have amended the claims to emphasize that the rough outer surface of a *chalcogenide comprising material or chalcogenide glass layer* is etched away. Hudson is relied upon for the use of an iodine comprising solution and adds nothing to rectify the deficiencies associated with Kozicki.

As such, the cited references do not disclose or suggest a method comprising, *inter alia*, "forming a first conductive electrode . . . forming a chalcogenide comprising material . . . forming a metal-containing layer over the chalcogenide comprising material; diffusing at least a portion of said metal-containing layer into said chalcogenide comprising material . . . [which] forms a rough outer surface on said chalcogenide comprising material; exposing a portion of said rough outer surface of the chalcogenide comprising material to an iodine comprising fluid that reduces the roughness of said outer surface by *etching away at least a portion of said rough outer surface of the chalcogenide comprising material*; and forming a second conductive electrode material," as recited in claim 26 (emphasis added).

The cited references do not teach or suggest a method comprising, *inter alia*, "forming a chalcogenide glass layer; forming a metal-containing layer . . . forming a rough outer surface on at least a portion of said chalcogenide glass layer by diffusing at least a portion of said metal-containing layer into said chalcogenide glass layer . . . and, smoothing said rough outer surface with an iodine comprising fluid that *removes at least a portion of said rough outer surface of the chalcogenide glass layer*," as recited in claim 31 (emphasis added).

Similarly, the cited references do not disclose or suggest a method comprising, *inter alia*, "forming a semiconductor substrate; forming a first dielectric layer . . . forming a first conductive layer . . . forming a second dielectric layer . . . forming an opening in at least a portion of said second dielectric layer, wherein at least a portion of said first conductive layer is exposed; forming a chalcogenide glass layer . . . forming a metal-containing layer . . . diffusing at least a portion of said metal-containing layer into said chalcogenide glass layer, wherein said step of diffusing forms a rough outer surface on said chalcogenide glass layer; *removing at least a portion of said rough outer surface* with an iodine comprising fluid to form a smoother surface *on the chalcogenide glass layer*; and, forming a second conductive layer," as recited in claim 35 (emphasis added).

Claims 28-30 depend from claim 26. Claims 33-34 depend from claim 31. Claims 37-48 depend from claim 35. Dependent claims 28-30, 33-34 and 37-48 should be allowable along with their base claim for at least the reasons provided above, and on their own merits.

For instance, the cited references do not disclose or suggest that the "potassium iodide solution comprises from about 5 to about 30 grams I₂ per liter of a from about 20% to about 50% potassium iodide solution," as recited in claims 29, 34 and 38.

The Office Action acknowledges that Kozicki and Hudson "fail to disclose the composition of potassium iodide solution." (p. 6); but, asserts that it would have been a matter of mere routine optimization to select Applicants' claimed composition and no evidence of criticality or unexpected results has been set forth.

In response, Applicants respectfully submit that the Office Action fails to set forth a *prima facie* case of obviousness. See M.P.E.P. § 2142. In particular, *none* of the cited references, alone or in combination, teaches or suggests Applicants' claimed composition for a potassium iodide solution. To establish *prima facie* obviousness of a claimed invention, *all* the claim limitations must be taught or suggested *by the prior art.*" M.P.E.P. § 2143.03 (emphasis added). As such, it is *inappropriate* to merely conclude that these parameters can be determined through routine optimization.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to review and pass this application to issue.

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Respectfully submitted,

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